

Roger Wayne Wallace

Father, Teacher, Friend

Roger Wayne Wallace, Ph.D. died February 1, 2011 at 11:37 am at the age of 91. He is survived by his three children Elizabeth Karen Wallace Jones of Dixon, CA, Douglas Charles Wallace, M.D. of Coverdale, IL, and Arthur William Wallace, M.D., Ph.D. of San Rafael, CA, and by his wife Gretchen McDonald, Ph.D. of Malahat, BC. He died in Victoria, British Columbia after complications from a stroke.

Roger Wallace was born in Baltimore, Maryland on October 30, 1919. He was the only child of Roger Wayne Wallace Sr., a real estate lawyer for Sears Roebuck and Elizabeth Thompson Wallace. As a child, Roger enjoyed photography, including color photography which, when he was young, required using three different colored starch granules to make colored images.

Roger grew up in both Chicago and Miami Beach, commuting by train between the two to avoid the Chicago winters. He was in Miami in 1926 when a hurricane destroyed the city. His house was flooded, school was cancelled for a year, his family car was conscripted by the Red Cross, and he avoided drowning when the eye of the hurricane went over by listening to his mother when she refused to allow him to play on the beach and pick up fish as the eye went over. He attended high school at Oak Park High in Chicago.

In Miami Roger became an excellent swimmer and served as a life guard at Oak Park High in the boys' gymnasium, as he said, "to avoid playing football in shorts in the snow". His responsibilities included running the washing machine for students prior to entering the pool, inspecting students for dirt, testing specific gravity of students (float test), running the electric arc sterilization system for pool water (no chlorine was used), and rescuing the occasional student by poking them with a long pole. Male students swam in the nude at Oak Park High, although he was allowed to wear a swim suit as life guard. The school was co-ed. The girls had a separate pool and did have swim suits. They were allowed to visit the boys pool to observe "swimming technique".

After high school Roger drove out to California to attend the California Institute of Technology (Cal Tech). He worked as a waiter in the student dining halls which gave him great insight into how to use underliners, utensils, and how to serve food, information he later inflicted on his children, grand children, and anyone who would listen. As a freshman he met Isabelle Ruth Chadwick who lived in Pasadena. They dated for eight years before marrying. Isabelle was a better athlete than Roger, routinely beating him at tennis. The one time he won, he jumped over the net, tripped, and broke his left wrist. He built a snipe sailboat at his parents' house (which was unfortunately quickly eaten by toredos - marine worms).

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Roger graduated from CalTech with a B.S. in physics and searched for a job. He took a job at Lockheed working on aircraft design. His first assignment was to work in each of the construction divisions to gain insight into what was involved in construction prior to doing any design. Drawings were done full scale. His love of the flush mounted rivet was first born here. He worked on the Constellation and the P-38. He contributed several major design decisions to the P-38 including preventing the inclusion of windows that opened in a pressurized cockpit and deciding that it would be the first fighter plane without a slot for the pilot's ceremonial sword. The Navy commissioned him as an ensign and he was assigned to stay at Lockheed until needed for WW2.



Lockheed P-38 Lightning

Roger worked on a number of rockets including the Hedgehog rocket system and a rocket-propelled torpedo. Torpedoes at the time had a tendency to break apart when dropped from aircraft. They would explode, damaging the aircraft. They also tended to not explode when they hit targets. He wrapped the torpedo in stainless steel mesh to strengthen it. They tested the strength by dropping it from an airplane onto a concrete parking lot. The stainless steel mesh and rocket engine seemed to solve the fragility problems. This early experience led to a life-long love for stainless steel. At one point they had a problem with rocket engines that just exploded when

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ignited. After much study, Roger realized that the materials for the rocket fuel had been purified to remove dirt. The light from the flame front was so intense it ignited the rest of the fuel, optically causing the rocket motor to explode. They added some India ink to make the fuel more opaque, thus curing the problem. Roger did blow up one rocket motor test facility in the process of figuring this problem out. He continued to work at Lockheed before and during World War II.

Roger's first wife, and the mother of his children, Isabelle Ruth Chadwick, attended Stanford as an undergraduate. In her senior year, money became tight and Roger offered to pay for Isabelle's senior year at Stanford. Such an offer, according to Wallace Chadwick, her father, required marriage. This was during WW2. Roger traveled by train to California, married, and then returned to the east coast. The photos of the nuptials were taken the day before he arrived, so he is not in any of the wedding photos. Roger encouraged Isabelle to study either engineering or medicine, but her father stated that the only appropriate professions for a woman were teacher or nurse. Isabelle became a history teacher.

The winter after his marriage, during WW2, Roger was sent to officer's training school on Long Island, NY. His dislike of exercise in the snow made this an especially memorable time. He long remembered that the class did worse on the physical testing after officer's training school than they did on admission. He learned to fire a machine gun and to use the muzzle flash to find targets. He learned how to enter and clear a room. He learned how to use explosives to fell a tree and how to convert a Colt 45 pistol to fully automatic. They were told that the .45 was a completely useless weapon, so one should break off a small tab of metal, fire the clip, and while everyone was ducking, thinking it was a machine gun, run away. Seems like useful advice, but I have never seen it used in a movie. He was in New York City at a show when an army bomber ran into the Empire State Building. They all went down to see the damage.

The next adventure was blimp school! In the immortal words of Roger's commanding officer, "Blimps are dumb." Roger was sent to England and then on to Paris where he had an office on the Champs-Élysées across from the Arc de Triomphe. His time in Paris was spent going to the opera, shows, and working. Ultimately, he was assigned a jeep and a driver and given the task of searching southern Germany for nuclear weapons, rockets, and scientists. He captured a train full of artillery pieces, which he said was a giant problem because who do you give a train to? He saw the insides of many German factories with their slave cages and he liberated a German factory that was testing focused explosives on prisoners. He took lots of pictures, none of which showed any war damage. When asked he said, "Why would I want a picture of broken stuff?" He said that no building in Germany was more than waist high and he spent six months outside, which did not make him a fan of camping.

Roger returned to the states on the Queen Mary and was assigned to White Sands, California to work on rockets until he entered graduate school at the University of California at Berkeley in Physics. Isabelle taught school in the East Bay. Roger worked on cosmic rays, the bubble chamber, the antimatter proton, and particle physics. He completed his Ph.D. and then worked on radiation physics. He taught nuclear engineering.

In 1964 he went around the world with the World Health Organization studying people who lived on radioactive sand in India to see its effects on long term health. Much to everyone's surprise, while these people received 4-5 times the standard background radiation, they lived longer and were healthier than most people. It was another example of hormesis.

Roger worked at UC Berkeley and Lawrence Berkeley Labs from his days as a graduate student until his late 80's as both a lecturer and as chairman of radiation safety. He taught a course on radiation biology to physicists and tried to convince students he met to go to medical school. He spent his early research years with an experiment on cosmic rays flying a B-36. It was a plane built to drop thermonuclear weapons when Ernest Lawrence wasn't quite sure how big they would be. The concept was that they would be smaller than two railway cars. So Truman built one hundred B-36s with a bomb bay that could accommodate a railway car. Roger used one for physics experiments. He even attended the Bikini Test shot and was knocked to the floor by the blast.



The B-36 had jet engines and propellers

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Elizabeth (Betsy) Wallace was born in 1954, Douglas (Doug) in 1956, and Arthur (Art) in 1959. Roger and Isabelle designed and then built a 4,500 square foot house in Orinda, California. It was extremely modern at the time with large plate glass windows, an electrical outlet with both standard and switched power every 18 inches along the wall, wiring for cable TV (this was in 1958), a shuffle board court, an 8 by 8 foot chess set in the floor, lighting for photography, and an intercom. It was fantastic. Two weeks after they moved in, the nearby fire station burned down, and the county moved the county line, putting the house in Berkeley. Thirteen years later they sold it to avoid the People's Republic of Berkeley and they moved back to Orinda proper. It was a wonderful house, with a wonderful view to the east, behind, as Roger would say, the blast line of the hills.

Isabelle died in 1972 and Roger quickly remarried a psychiatrist named Marjorie Hayes, M.D. Roger and Marjorie travelled extensively on cruise ships and then freighters. Betsy attended Hayward State University and then attended and graduated from U.C. Davis. Betsy is married to a veterinarian and lives in Dixon, California with her husband and three children. Doug attended the University of London, U.C. San Diego, and U.C. Davis and then graduated in Biochemistry from U.C. Davis. He attended graduate school at U.C.L.A. in Biochemistry and then medical school at the Uniformed Services University of the Health Sciences. Doug served as a Navy physician for more than 20 years and is now a cardiac surgeon in Illinois. Doug is married to a neuroradiologist and has two children, a son who is a medical student in the Navy and a daughter who is in Naval Aviator's Training. Art attended Yale College in Electrical Engineering and then received a Ph.D. from Johns Hopkins in Biomedical Engineering and an M.D. at Johns Hopkins Medical School. Art is a professor at U.C. San Francisco in Anesthesiology. He is married to a linguist/educator and they have two children. Roger had a firmly held belief in education, science, and medicine, and pushed many students to become physicians. He helped Marjorie's nephew Daryl Browne go to graduate school at UCB. Daryl then received a M.D. from Yale Medical School and is now a psychiatrist in San Francisco.

Roger was an enthusiast for computers teaching Fortran programming. He soldered together a number of 8080 computers in the mid 1970's, was a member of a number of computer clubs, and always had a portable PC with him in his later years.

Marjorie developed alzheimers in the mid 1990's and died in Jan 2011. Roger met Gretchen McDonald, Ph.D. in 2000 on the Aranui, a mixed passenger/cargo vessel that operates between Tahiti and the Marquesas. Gretchen and Roger greatly enjoyed cruises, freighters, and world travel. He moved to Victoria, British Columbia to live with her a few years ago.



The Aranui

Roger loved travel, eating lunch and dinner, iced tea with lemon, and good conversation. He traveled extensively to see solar eclipses, the aurora borealis, and the continents. He attended a wedding in San Diego of Gretchen's granddaughter. As he put it, he ate too much Mexican food and felt ill. Kaiser diagnosed a bradyarrhythmia with pauses and recommended a pacemaker. Pacemaker placement went well. Reversal of Coumadin led to a post procedure stroke which led to complications and death.

Roger Wayne Wallace, Ph.D. was a wonderful father, grandfather, a generous friend, teacher, lecturer, historian, philistine, traveler, and enthusiast for computers, boats, skiing, photography, and electronics. He will be sadly missed.

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